



# 2N5551

## NPN SILICON TRANSISTOR

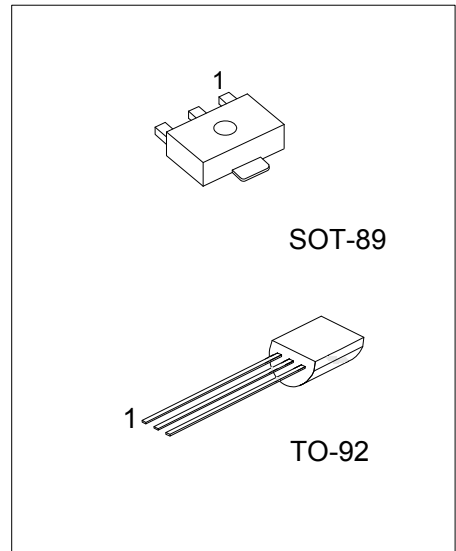
### HIGH VOLTAGE SWITCHING TRANSISTOR

#### FEATURES

- \* High collector-emitter voltage:  
 $V_{CE0}=160V$
- \* High current gain

#### APPLICATIONS

- \* Telephone switching circuit
- \* Amplifier



#### ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen Free		1	2	3	
2N5551-x-AB3-R	2N5551L-x-AB3-R	2N5551G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2N5551-x-T92-B	2N5551L-x-T92-B	2N5551G-x-T92-B	TO-92	E	B	C	Tape Box
2N5551-x-T92-K	2N5551L-x-T92-K	2N5551G-x-T92-K	TO-92	E	B	C	Bulk

<p>2N5551L-x-AB3-R</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Rank</p> <p>(4) Lead Plating</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) T92: TO-92, AB3: SOT-89</p> <p>(3) x: refer to Classification of <math>h_{FE}</math></p> <p>(4) L: Lead Free Plating, Blank: Pb/Sn, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	180	V
Collector-Emitter Voltage	V <sub>CEO</sub>	160	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Dissipation	P <sub>C</sub>	625	mW
Collector Dissipation		500	mW
Collector Current	I <sub>C</sub>	600	mA
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	180			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	160			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6			V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =120V, I <sub>E</sub> =0			50	nA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>BE</sub> =4V, I <sub>C</sub> =0			50	nA
DC Current Gain(Note)	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	80	160	400	
	h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA	80			
	h <sub>FE3</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =50mA	80			
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.15 0.2	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			1 1	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA, f=100MHz	100		300	MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0 f=1MHz			6.0	pF
Noise Figure	NF	I <sub>C</sub> =0.25mA, V <sub>CE</sub> =5V R <sub>S</sub> =1kΩ, f=10Hz ~ 15.7kHz			8	dB

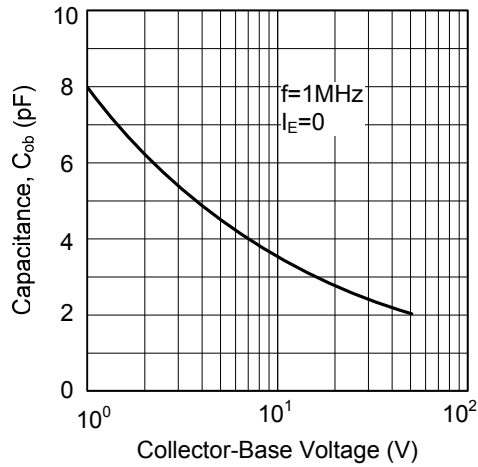
Note: Pulse test: PW<300μs, Duty cycle<2%

■ CLASSIFICATION OF h<sub>FE</sub>

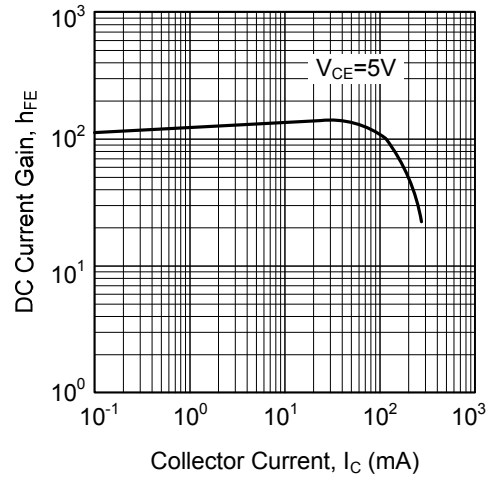
RANK	A	B	C
RANGE	80-170	150-240	200-400

### TYPICAL CHARACTERISTICS

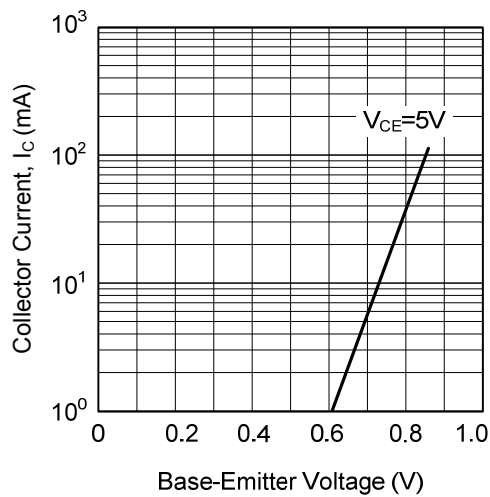
Collector Output Capacitance



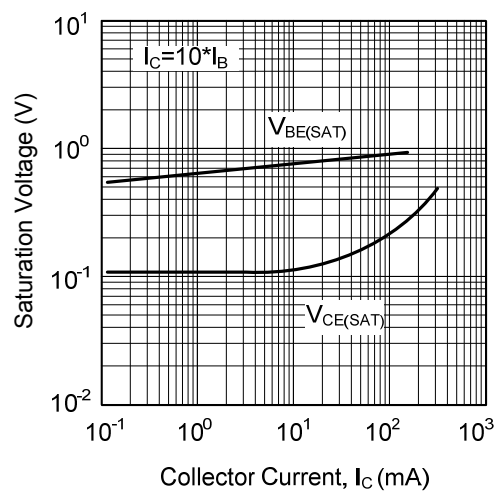
DC Current Gain



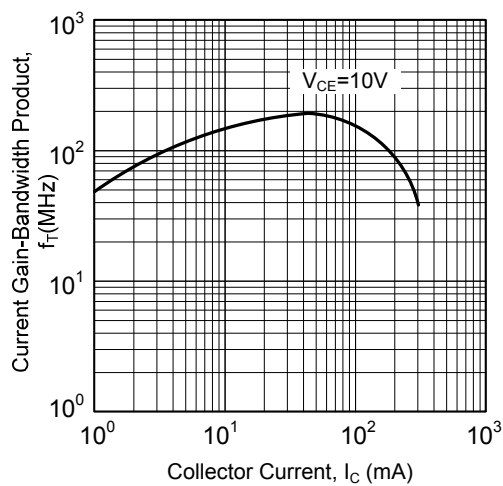
Base-Emitter on Voltage



Saturation Voltage



Current Gain-Bandwidth Product



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